

actively involved in litter pickups that include recycling of cans and bottles.

- *Business Awards Program.* The ESC co-sponsors the City's annual Business Awards Program with the Economic Development Authority and the Falls Church Chamber of Commerce. As part of the program, an Environmental Protection Award is presented to a business that has demonstrated a commitment to recycling and use of recycled products. Awardees are recognized by City Council and other community leaders during an annual Business Awards Ceremony, and through a special edition of "Marketplace" produced by and broadcast on the local cable station.
- *Volunteer Recognition Picnic.* The City's Recycling Coordinator hosts a picnic annually to recognize recycling volunteers. Among those honored are the ESC and Recycling Block Captains.
- *City Leadership Program.* The City Leadership Program, adopted by City Council in 1993, specifies that the City purchase paper products made with recycled content. The program also includes a policy granting a preference to products with recycled content, as long as they are of comparable quality and price.



The City's Employee Task Force on Waste Reduction and Recycling is a seven-member, inter-departmental body that was established through the City Leadership Program to represent the City's 250 employees. The task force meets monthly and is staffed by the City's Recycling Coordinator. This group has promoted recycling at City government facilities through such initiatives as sponsoring a "Buy Recycled" workshop, promoting recycled products purchasing, promoting the "Recycling Extravaganzas," sponsoring a "Recycling Hero" contest that recognizes individual City employees, sponsoring "Clean Your Files Day," promoting recycling at all employee events (e.g., annual Employee Picnic, Winter Luncheon, retirement parties, etc.), submitting articles to the *Cherry Hill Chronicle* (monthly employee newsletter), sponsoring a "Tip of the Month" program that promotes recycling via e-mail messages and bulletin board displays, and establishing collection of aluminum cans at City facilities for the ACBC program.

Electronics waste is projected to grow significantly in the City of Falls Church.

Electronics and Computers Recycling



The television and personal computer's rapid rate of obsolescence and environmentally unfriendly elements (including lead, mercury, and cadmium) make refurbishing, recycling, and disposal issues important. The City of Falls Church is developing electronics and computers recycling practices and policies to reduce

the volume of these products requiring disposal.

Projected growth and obsolescence rates of various categories of consumer electronics indicate an average of 400 million units scrapped per year in the United States.¹ Included in these estimates are approximately 20 million televisions and 30 million computers per year. Using national per capita average rates, the City will likely generate roughly 750 obsolete televisions and 1,100 obsolete computers per year.

The low cost of new electronics and computers coupled with stringent purchasing requirements have reduced the demand for refurbished and resold equipment. Scrapping and recycling are emerging as viable methods for managing old electronics and computers. The Mid-Atlantic Consortium of Recycling and Economic Officials estimates that scrapping a computer generates revenue of \$34.26 per machine and a cost of \$1 to \$10 for disposal of monitors in bulk.²

The City currently promotes electronics recycling through the bi-annual "Recycling Extravaganza."

The City of Falls Church currently supports electronics recycling through the bi-annual "Recycling Extravaganza." Since 2000, nearly 70 tons of computers and other electronic equipment have been recycled by Subtractions, Inc. through this event. In addition, the City's Recycling Coordinator refers citizens to the Keep It Green "E-Waste" Program during other times of the year. This program, located in Alexandria, VA, is a partnership between Service Source and Computer Donation Management.



Future City programs will support initiatives to recycle electronics and computers, helping to eliminate these items from the waste stream. In addition to removing these items from the waste stream, recycling electronics and computers will help the City of Falls Church comply with the proposed EPA rule requiring recycling of cathode ray tubes, which are found in computer monitors and televisions.

¹ International Association of Electronics Recyclers (IAER), *IAER Electronics Industry Report*, 2003.

² Northern Virginia Planning District Commission, *The Northern Virginia Recycling Market Development Project*, January 7, 2000.

Materials Recovery Facilities (MRFs)

Once collected, City of Falls Church recyclables are transported to either the Recycle America Alliance (RAA) materials recovery facility (MRF) in Merrifield, VA, the Capitol Fiber MRF in Springfield, VA, or the Environmental Recycling, Inc. (ERI) MRF in Alexandria, VA:

The Capitol Fiber MRF currently accepts recyclables from the Falls Church Recycling Center.

- *Capitol Fiber MRF* - The Capitol Fiber MRF, majority owned by the Washington Post, currently accepts materials collected at the Falls Church Recycling Center. In addition, the facility accepts recyclables from businesses in the City, as well as recyclables from surrounding areas, such as Fairfax County, Anne Arundel County, Prince William County, and the District of Columbia. The facility currently receives about half commercial and half residential/small commercial recyclables.

The Capitol Fiber MRF in 2003 managed roughly 7,000 tons per month (84,000 tons per year) of recyclables. The capacity of the MRF is currently 10,000 tons per month.



Materials accepted include mixed paper (i.e., newspaper, magazines, cardboard, and white paper), glass, aluminum and steel cans, and plastics (high density polyethylene (HDPE) and polyethylene terephthalate (PET)). In 2003, the facility only processed mixed paper, which is sorted through manual and mechanical processes into white (office paper), brown (cardboard), and gray paper (ground wood, i.e., newspaper).

In December 2003, the facility added the ability to process residential commingled recyclables on-site rather than transporting them to a subcontractor.

Capitol Fiber receives most recyclables (90 percent) through contracts with collection companies; the remaining 10 percent consists of “walk-ins” by collection companies. Once processed, recyclable materials are baled and sold by the truckload. Sales are split evenly between domestic and foreign markets. Capitol Fiber sells almost 75 percent of materials through contracts; the remainder is sold on the open market.

- *Recycle America Alliance (RAA)/Waste Management MRF* - The RAA/Waste Management MRF in Merrifield, VA, accepts materials collected curbside by United Refuse, LLC from residents of single family homes, most

townhouse developments, and two condominiums. The City receives a monthly revenue check from RAA for the sale of fiber. These funds are placed in the City's general fund.

The RAA/Waste Management MRF accepts commercial mixed paper (cardboard, office paper, and newspaper), residential mixed paper (newspaper, paperboard, and magazines), high-grade office paper, commingled recyclables, scrap metal, and carpeting (Dupont Nylon #6 only). Waste Management contracts for recyclables with commercial and residential haulers. The facility also accepts recyclables on a spot basis.

RAA/Waste Management in 2003 managed roughly 4,500 tons of recyclables per month (54,000 tons per year). The capacity of the MRF is 8,000 tons per month (96,000 tons per year).



The facility currently processes only paper. Commercial mixed paper is sorted mechanically with minimal manual sorting. Residential mixed paper and high-grade office paper loads are sorted manually on conveyor belts. Commingled recyclables, scrap metals, and carpeting are loaded into large tractor-trailers and transported to other facilities for sorting.

The facility bales sorted paper by type and grade. RAA/Waste Management sells the recyclable paper, primarily domestically (approximately 90 percent).

- *Environmental Recycling, Inc. (ERI) MRF* - The ERI MRF, located in the City of Alexandria, currently accepts paper collected from City of Falls Church government and schools. In addition, the facility accepts paper from businesses in the City, as well as from surrounding areas.

The ERI MRF accepts almost all grades of pre- and post-consumer recyclable paper and cardboard. ERI processes approximately 4,000 to 5,000 tons of paper each month (48,000 to 60,000 tons per year) recovered from a large customer base throughout the Washington, D.C. metropolitan area.

The total capacity of the MRFs the City currently uses is 276,000 tons per year (232,000 tons of paper and 44,000 tons of commingled recyclables).

Table 6-4 shows the quantities of recyclables (paper and commingled) managed in 2003 and existing capacity for the three MRFs currently used by the City of Falls Church. The total capacity of these MRFs is 276,000 tons per year; the capacity for paper recyclables is 232,000 tons per year and for commingled recyclables is 44,000 tons per year.

Table 6-4. City of Falls Church MRF Quantities and Capacities 2003 (tons)

	Capital Fiber	RAA/Waste Management	ERI	Total
Paper				
Current Quantity	72,000	49,000	54,000	175,000
Capacity	90,000	82,000	60,000	232,000
Commingled Bottles and Cans				
Current Quantity	12,000	4,800	0	16,800
Capacity	30,000	14,000	0	44,000

City Recycling Program Policy Administration

The City administers recycling policy through City Code, Chapter 13. Section 13-8 provides the City's Director of Public Works authorization to enforce and administer the provisions of the chapter. The section also establishes civil penalties for violations of recycling policy. The City's Recycling Coordinator is responsible for all solid waste code enforcement.

Public Outreach and Education - Recycling

The City of Falls Church promotes recycling through its public outreach and education efforts, which include a network of recycling block captains, informative literature, recycling booths and presentations, banners and media, press releases and public service announcements (PSAs), the City website, and the Falls Church Environment Website. (Public outreach and education efforts are discussed in more detail later in this chapter.)

Economics is at the core of all recycling collection decisions.

Recycling Markets



markets for these materials. Therefore, focusing on materials for which strong markets already exist is critical.

Economics is at the core of all recycling collection decisions. Recycling plans must focus on the costs and benefits of current, new, and future programs. Although recycling specific material may benefit the environment, the economic cost is sometimes an obstacle for a municipality, which has little chance of affecting the

Economic viability of recycling is based on:

- 1. Disposal cost savings**
- 2. Materials revenue**
- 3. Recyclable Transport Costs**
- 4. Recyclable Processing Costs**

The economic viability of recycling is based on four factors: (1) the cost savings from eliminating disposal, (2) the revenue from selling recyclable materials, (3) the cost of transporting recyclable materials, and (4) the cost of processing recyclables. The economic viability of recycling may increase with higher alternative disposal costs, stronger local markets for recyclable materials, shorter transportation distances to markets, and more efficient processing of recyclables.

Appendix B contains September 2003 rates paid for recyclables in the local market and nationally. Revenue from sale of recyclable material offsets the costs to collect the materials. For example, in 2003 the City received nearly \$30,000 from paper and cardboard collected curbside.

Market Development

Four key factors drive the supply, demand, and pricing of the City's recyclable markets:³

1. *Virgin capacities and recycled capacities.* Prices and availability of recycled materials mirror changes in prices and availability of virgin commodities.
2. *Geography.* The viability of City recyclable markets varies on the basis of local manufacturer demand.
3. *Transportation costs.* The distance to market is a significant factor in the pricing of commodities.
4. *End product demand.* Recyclable material markets are driven by the demand for the end-products manufactured from the recyclable materials.

Needs

Development needs of the wider economic recycling market include:

- greater diversification of recyclables end-uses to increase the demand for recyclables and make recycling more economically viable for municipalities like the City of Falls Church;
- research and development funding for investigating new and improved methods of recycling and recyclables materials reuse; and,
- improvement in the communication between recyclable collectors and end-users.

³ Michael Fickes, "Calculating Recycling Markets," *Waste Age*, December 1, 1997.

Potential Barriers

Potential barriers to recycling include:

- cheap landfill disposal costs in rural Virginia;
- public opposition (*NIMBY* - not in my backyard) to the siting of recycling facilities;
- the perception of some procurement officials that recycled products are lower in quality than virgin products;
- funding constraints for recycling programs;
- the marginal cost of recycling may increase with higher recycling rates;
- transportation costs, because few manufacturers are located in Northern Virginia and end-users of some recyclables materials are too distant for economical transport of recyclables to them; and,
- undeveloped (or underdeveloped) markets for some recyclables, which may emerge if end-products satisfy consumer demand.

Assessment of Current and Future Recycling Needs

As discussed, the economic viability of recycling depends on a number of factors, including the prices for recyclable materials. The City of Falls Church does not have the market size necessary to affect the national market for recyclables. Although City “buy recycled” campaigns may help the development of local markets somewhat, market development occurs at the national level.

Chapter 2 of this SWMP presents the projected quantities of MSW generated, recycled, and disposed in the City of Falls Church over the SWMP planning period. The City developed four alternative MSW projections to address the probable range of variance in the future generation rates.

The City projects annual MSW recycling volumes (excluding yard waste and special wastes) will increase between 24 and 76 percent from 2004 to 2025, assuming continuation of current waste management practices.

As discussed in Chapter 2, the MSW projections assume that the overall recycling rate will remain at 51.9 percent, the residential recycling rate will remain at 55.5 percent, and the commercial recycling rate will remain at 48.9 percent over the SWMP planning period. Table 6-5 and Figure 6-1 show the projected quantities of MSW recycled in the City over the SWMP planning period for the four projection alternatives. ***(Note that these projections assume the continuation of the City’s current management practices and conditions.)*** These MSW recycling projections do not include yard waste and special wastes; the City evaluated the management for yard waste and special wastes separately in this SWMP. The City of Falls Church projects annual MSW recycling volumes to increase between 24 and 76 percent from 2004 to 2025.